IN THE CLAIMS:

1. (Previously Presented)   A graphical user interface comprising:

a rendered image of at least one graphical object, wherein the graphical object uses a number of pixels on a display device;

a color value stored for each pixel in the display device; and

object identification data stored with each pixel covered by the rendered image, wherein the object identification data uniquely identifies the graphical object located at the pixel.

2. (Currently Amended)   The graphical user interface of claim 1, wherein the rendered image comprises a three-dimensional image comprising at least two graphical objects that are co-located at at least one point in an x-y view plane, wherein only one of the co-located graphical objects is visible at a pixel corresponding to the at least one point and the object identification data for the pixel identifies the visible graphical object.

3. (Original)   The graphical user interface of claim 1 further comprising processes for writing the object identification data with the color value to a frame buffer when drawing the rendered image of the at least one graphical object on the display device.

4. (Previously Presented)   The graphical user interface of claim 1 further comprising processes for reading the object identification data with the color value from a frame buffer.

5. (Original) The graphical user interface of claim 1 further comprising a cursor pointing to a particular coordinate of the graphical display device, movement of which is controlled by user input.

6. (Original) The graphical user interface of claim 5 further comprising processes for reading the object identification data. with the color value from the frame buffer of a pixel associated with the particular coordinate pointed to by the cursor.

7. (Original) The graphical user interface of claim 6 further comprising an interface for exporting the object identification information to an external process.

8. (Original) The graphical user interface of claim 6 further comprising a metadata information display object displayed on the display in response to the object identification data of the pixel associated with the particular coordinate pointed to by the cursor.

9. (Original) The graphical user interface of claim 6 further comprising an object-identification value indexed data structure holding metadata about the an object uniquely identified by the object identification value.

10. (Previously Presented) The graphical user interface of claim 4 further comprising processes for reading the object identification data with the color value from a frame buffer.

11. **(Original)** A method for providing information to a program using a graphical user interface, the method comprising:

rendering an image of a plurality of graphical objects at specified locations of a two-dimensional display device;

storing a color value for each location in the two-dimensional display device; and storing object identification data for each of the specified locations, wherein the object identification data uniquely identifies one of the graphical objects at the at least one location.

12. **(Currently Amended)** The method of claim 11 wherein from a particular viewpoint, at least two of the graphical objects intersect at <u>at</u> least one intersection location of image, and the object identification data stored at the pixel associated with the intersection location identifies an object that is visually closest to the viewpoint.

13. **(Original)** The method of claim 11 further comprising:

using the object identification data to identify one of the intersecting graphical objects.

14. **(Original)** The method of claim 11 further comprising writing the object identification data with the color value to a frame buffer when drawing the rendered image of the plurality of graphical objects on the two-dimensional display device.

15. **(Previously Presented)** The method of claim 11 further comprising reading the object identification data with the color value from a frame buffer.

16. (Original) The method of claim 11 further comprising:

receiving user input indicating movement on the two-dimensional display device; and

pointing to a particular location of the two-dimensional graphical display device

indicated by the user input.

17. (Original) The method of claim 16 further comprising reading, from the frame

buffer, the object identification data with the color value of a pixel associated with the particular

location pointed to.

18. (Original) The method of claim 17 further comprising exporting the object

identification information to an external process.

19. (Original) The method of claim 17 further comprising displaying a metadata

information display object on the two-dimensional display device in response to the object

identification data read from the particular location pointed to.

20. (Original) The method of claim 17 further comprising storing metadata about the

graphical objects in an object-identification value indexed data structure; and

using the object-identification value read from the particular location pointed at to index

into the data structure so as to retrieve metadata about a particular object.

21. (Original) The method of claim 20 further comprising displaying a metadata

information display object displayed on the display in response to the object identification data.

22. (Previously Presented) A computer-readable medium containing instructions for controlling a data processing system to perform a method of providing information to a program object, the method comprising:

rendering an image of a graphical object at specified locations of a two-dimensional display device;

storing a color value for each location in the two-dimensional display device;

storing object identification data for each of the specified locations, wherein the object identification data uniquely identifies one of the graphical objects at the at least one location; and

using the object identification data to identify the graphical objects.

23. (Previously Presented) The computer-readable medium of claim 22 wherein at least two of the graphical objects intersect at least one location on the two-dimensional display device.

24. (Original) A method for associating graphical elements in a graphical user interface with metadata describing the graphical elements, the method comprising:

associating a unique object identification value with each graphical element;

providing a data structure having an entry for each graphical element, each entry being associated with a particular object identification value; and

storing metadata about an associated graphical element in a corresponding entry of the data structure.

25. (Original) The method of claim 24 further comprising storing the unique object

identification value in a frame buffer.

26. (Previously Presented) The method of claim 24 further comprising:

determining display information describing how each graphical element is to be

displayed; and

storing the unique object identification value corresponding to the graphical element in a

frame buffer location associated with the particular display location.

27. (Original) The method of claim 26 further comprising:

receiving user-input identifying a user-identified location in the display; and

extracting the object identification value associated with the user-identified location from

the frame buffer.

28. (Original) The method of claim 27 further comprising retrieving the stored metadata

using the extracted object identification value.

29. (Original) A computer program product embodied in a tangible medium comprising

computer program devices configured to cause a computer to associate graphical elements in a

graphical user interface with metadata describing the graphical elements, the computer program

product comprising:

first program devices configured to cause the computer to associate a unique object

identification value with each graphical element;

second program devices configured to cause the computer to implement a data structure

having an entry associated with a particular object identification value; and

third program devices configured to cause the computer to store metadata about an

associated graphical element in a corresponding entry of the data structure.

30. (Original) The computer program product of claim 29 further comprising:

fourth program devices configured to cause the computer to determine display

information describing how each graphical element is to be displayed;

fifth program devices configured to cause the computer to select one graphical elements

as a front-most graphical element at each pixel; and

sixth program devices configured to cause the computer to store the unique object

identification value corresponding to the front-most graphical element in a frame buffer location

associated with the particular display location at which the front-most graphical element is

displayed.

31. (Original) The method of claim 30 further comprising:

seventh program devices configured to cause the computer to receive user-input

identifying a user-identified location in the display; and

eighth program devices configured to cause the computer to extract the object

identification value associated with the user-identified location from the frame buffer.

32. (Original) The method of claim 30 further comprising ninth program devices configured to cause the computer to retrieve the stored metadata using the extracted object identification value.

33. (Original) A system for displaying and interacting with graphic objects, the system comprising:

a display device comprising a plurality of pixels arranged in a two-dimensional array, wherein graphical objects may be associated with any of the plurality of pixels;

a frame buffer having a plurality of entries where each entry is associated with one of the plurality of pixels;

object identification information corresponding to one of the graphical objects, the object identification information being stored in a frame buffer.

34. (Original) A computerized system comprising:

a display comprising a plurality of pixels where each pixel is located at a defined coordinate;

an application process generating a plurality of graphical objects, each graphical object having a unique object identification (ID) value;

a rendering process receiving the plurality of graphical objects and determining visible surfaces of the plurality of graphical objects with respect to a predetermined perspective;

a pixel map comprising a plurality of entries, each entry corresponding to one of the visible surfaces determined by the rendering process;

object identification data associated with at least some of the entries in the pixel map;

a pointer movable to selected coordinates of the display, movement of which is controlled by a

pointing device; and

an object identification process coupled to read the coordinates of a selected pixel pointed

to by the pointer and extract the object identification information associated with the pixel.

35. (Previously Presented) A user interface for a three-dimensional environment

comprising:

a pointer, movement of which is controlled by a pointing device;

at least one graphical object displayed on at least one pixel of a display; and

a frame buffer having memory for the at least one pixel, the memory including a first

field for holding display information and a second field for holding object identification

information.

36. (Original) A frame buffer comprising:

a plurality of memory locations, each memory being associated with a pixel of a display

device;

display data stored the memory locations, the display data indicating how the pixel is to

be activated; and

object identification data stored in at least some of the memory locations, the object

identification data indicating a unique software graphical object being displayed by the pixel.

37. (Previously Presented) A graphical user interface comprising:

a rendered image of at least one three-dimensional graphical object, wherein the

graphical object uses a number of pixels on a display device, and wherein there is stored a

respective color value for each pixel in the display device; and

object identification data stored with each pixel covered by the rendered image, wherein

the object identification data uniquely identifies the graphical object located at the pixel.

38. (Previously Presented) A graphical user interface comprising:

a rendered image of at least one three-dimensional graphical object, wherein the

graphical object uses a number of pixels on a display device, and wherein the rendered image

produced using a z-buffer technique; and

object identification data stored with each pixel covered by the rendered image, wherein

the object identification data uniquely identifies the graphical object located at the pixel.